

2. (Amended) A contention-based communications network in which first and second independent linked-list chains of data packets transmitted by communications stations, once formed, are allowed to continue to exist independently for an indeterminate amount of time.

3. (Amended) The invention of claim 2 wherein said communications network includes a communications medium and wherein the communications stations transmitting the data packets of said first and second independent linked-list chains repetitively access said medium.

4. (Amended) The invention of claim 3 wherein said first and second independent linked-list chains of data packets are joined into a single linked-list chain only if the separation between them becomes less than a particular amount.

5. (Amended) The invention of claim 3 wherein if the separation between said first and second independent linked-list chains becomes less than a particular amount, the separation between said first and second independent linked-list chains is caused to be increased.

6. (Amended) The invention of claim 3 wherein said first and second independent linked-list chains are joined into a single linked-list chain on at least certain occasions when a) the separation between them becomes less than a first particular amount and, in addition, b) the number of data packets in said first and second independent linked-list chains is not, in total, greater than a prescribed maximum.

7. (Amended) The invention of claim 6 wherein if a) the separation between said first and second independent linked-list chains becomes less than a second particular amount but b) the number of data packets in said first and second independent linked-list chains is greater, in total, than said prescribed maximum, the separation between said first and second independent linked-list chains is caused to be increased.

8. (Amended) The combination of a plurality of communications stations and a communications medium, each one of said stations being adapted to access said communications

medium only when that station perceives said medium to be idle, at least ones of said stations being adapted to arrange transmitted data packets into a plurality of chains, each of the stations transmitting data packets in each particular chain being further adapted to access said communications medium one after the other in such a way as to preclude any of said plurality of stations which are not transmitting data packets in said particular chain from perceiving said medium to be idle until each of the stations transmitting data packets in said particular chain has accessed said communications medium, the stations transmitting data packets in said plurality of chains repetitively accessing said communications medium over a succession of access periods, and said plurality of chains of data packets being separated within each of said succession of access periods by at least a particular time interval.

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9. (Amended) The invention of claim 8 wherein first and second ones of said chains of data packets are joined into a single chain only if the separation between them becomes less than a particular amount.

10. (Amended) The invention of claim 8 wherein if the separation between first and second ones of said plurality of chains becomes less than a particular amount, the separation between said first and second ones of said chains is caused to be increased.

11. (Amended) The invention of claim 8 wherein first and second ones of said plurality of chains are joined into a single chain if a) the separation between them becomes less than a first particular amount and, in addition, b) the number of data packets in said first and second ones of said chains is not, in total, greater than a prescribed maximum.

12. (Amended) The invention of claim 11 wherein if a) the separation between said first and second ones of said chains becomes less than a second particular amount but b) the number of data packets in said first and second chains is, in total, greater than said prescribed maximum, the separation between said first and second ones of said chains in subsequent ones of said access periods is caused to be increased.

36 15. (Amended) A method comprising the step of forming multiple linked-list chains of data packets transmitted by communications stations in a contention-based communications network, said method characterized in that said multiple linked-list chains, after having been formed, are not always thereafter joined into a single linked-list chain.

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17. (Amended) The invention of claim 16 wherein said communications network includes a communications medium and wherein the communications stations transmitting the data packets repetitively access said medium.

18. (Amended) The invention of claim 17 wherein first and second ones of said linked-list chains of data packets are joined into a single linked-list chain only if the separation between them becomes less than a particular amount.

37 19. (Amended) The invention of claim 17 wherein if the separation between first and second ones of said multiple linked-list chains becomes less than a particular amount, the separation between said first and second ones of said multiple linked-list chains is caused to be increased.

20. (Amended) The invention of claim 17 wherein first and second ones of said multiple linked-list chains are joined into a single linked-list chain on at least certain occasions when a) the separation between them becomes less than a first particular amount and, in addition, b) the number of data packets in said first and second ones of said multiple linked-list chains is not, in total, greater than a prescribed maximum.

21. (Amended) The invention of claim 20 where if a) the separation between said first and second ones of said multiple linked-list chains becomes less than a second particular amount but b) the number of data packets in said first and second ones of said multiple linked-list chains is greater, in total, than said prescribed maximum, the separation between said first and second ones of said multiple linked-list chains is caused to be increased.

22. (Amended) A method for use in a network comprising a plurality of communications stations and a communications medium, each one of said stations being adapted to access said communications medium only when that station perceives said medium to be idle, at least ones of said stations being adapted to arrange transmitted data packets into a plurality of chains, each of the stations transmitting data packets into a particular chain being further adapted to access said communications medium one after the other in such a way as to preclude any of said plurality of stations which are not transmitting data packets into said particular chain from perceiving said medium to be idle until each of the stations transmitting data packets into said particular chain has accessed said communications medium,

the method comprising the step of:

37 the stations which are transmitting data packets into said plurality of chains repetitively accessing said communications medium over a succession of access periods, said plurality of chains being separated within each of said succession of access periods by at least a particular time interval.

23. (Amended) The invention of claim 22 wherein first and second ones of said plurality of chains of data packets are joined into a single chain only if the separation between them becomes less than a particular amount.

24. (Amended) The invention of claim 22 wherein if the separation between said first and second ones of said plurality of chains becomes less than a particular amount, the separation between said first and second ones of said chains is caused to be increased.

25. (Amended) The invention of claim 22 wherein first and second ones of said plurality of chains are joined into a single chain if a) the separation between them becomes less than a first particular amount and, in addition, b) the number of data packets in said first and second ones of said chains is not, in total, greater than a prescribed maximum.

26. (Amended) The invention of claim 25 wherein if a) the separation between said first and second ones of said chains becomes less than a second particular amount but b) the number of data

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packets in said first and second ones of said chains is, in total, greater than said prescribed maximum, the separation between said first and second ones of said chains is caused to be increased.

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